

Patent claims

1. Electrophotographic printer (10) for printing a final image carrier (18),
5 having a transport means (16) for transporting the final image carrier (18),
having a first print unit (60) for producing a first toner image by a first arrangement of colored particles on a first conductor (62),
10 having at least one additional print unit (76) for the production of an additional toner image by means of an additional arrangement of colored particles on an additional photoconductor,
having a transfer means for the direct or indirect transfer of
15 the first toner image from the first photoconductor (62) and of the additional toner image from the additional photoconductor onto a surface segment on the front side of the final image carrier (18),
and having a module (20) for receiving the first print unit (60) in a first receptacle (I) and for receiving the
20 additional print unit (76) in an additional receptacle (II), whereby the first receptacle (I) and the additional receptacle (II) have essentially the same construction,
the first print unit (60) and the additional print unit (76)
25 is placed removably into the module (20), with few manual operations, characterized in that at least the first and/or the additional toner image contains at least one first image element of a first color and at least one additional image element of a further color, and by a single fixing means (24)
30 for fixing the toner images at least on the front and/or on the back of the final image carrier (18).
2. Electrophotographic printer (10) according to claim 1, characterized by

at least one additional print unit for the production of an additional toner image by means of an additional arrangement of colored particles on an additional photoconductor, a second transfer means for the direct or indirect transfer of the additional toner image from the additional photoconductor onto a surface segment on the backside of the final image carrier (18), and by a second module (182) for receiving the additional print unit in an additional receptacle.

3. Electrophotographic printer (10) according to claim 2, characterized in that the additional receptacle has essentially the same construction as the first receptacle (I) and the additional receptacle (II), and that the additional print unit is placed removably into the second module (182).

4. Electrophotographic printer (10) according to one of the preceding claims, characterized in that the first transfer means contains a first transfer unit (70) allocated to the first print unit (60), which transfer means transfers the first toner image directly from the first photoconductor (62) onto the front-side surface segment, and in that the first transfer means contains an additional transfer unit (78) allocated to the additional print unit (76), which additional transfer unit transfers the additional toner image directly from the additional photoconductor onto the front-side surface segment, and/or in that the second transfer means contains an additional transfer unit allocated to the additional print unit, which additional transfer unit transfers the additional toner image directly from the additional photoconductor onto the back-side surface segment.

5. Electrophotographic printer (10) according to one of claims 1 to 3, characterized in that the first transfer means contains a first transfer unit (106) allocated to the first print unit (60'), which transfer unit transfers the first toner image from the first photoconductor onto a surface segment of an intermediate carrier (102), and in that the first transfer means contains a further transfer unit (112) allocated to the additional print unit (76'), which transfer unit transfers the additional toner image from the additional photoconductor onto the surface segment of the intermediate carrier (102), and in that the intermediate carrier (102) is transported past a transfer point (110) near the front side of the final image carrier (18) by an intermediate carrier transport means (104), whereby at the transfer point (110) the toner images are transferred from the intermediate carrier (102) onto the front-side surface segment.

6. Electrophotographic printer (10) according to one of the preceding claims, characterized in that the second transfer means contains an additional transfer unit allocated to the additional print unit, which transfer unit transfers the additional toner image from the additional photoconductor onto a surface segment of a second intermediate carrier (202), and in that the second intermediate carrier (202) is transported past a second transfer point near the back side of the final image carrier (18) by a second intermediate carrier transport means, whereby at the second transfer point the additional toner image is transferred from the second intermediate carrier (202) onto the back-side surface segment.

7. Electrophotographic printer (10) according to one of the preceding claims, characterized in that at least one of the print units (212, 212') in the first module produces a third

toner image before or after the application of the first and of the additional toner image, which third toner image is transferred onto the front-side surface segment by the first transfer means,

and/or in that before or after the application of the additional toner image, the additional print unit produces a toner image that is transferred onto the back-side surface segment by the second transfer means.

8. Electrophotographic printer (10) according to one of the preceding claims, characterized in that in at least one of the print units (60, 212) there are contained:

a charge apparatus (126), arranged near a photoconductor (62), for the production of an electrical charge of at least a part of the photoconductor (62),

an exposure means (128) for the one-time exposure according to an image of the photoconductor (62) per toner image,

a first developer station (130) for the application of the colored particles of the first color (K) with a first polarity onto a first surface element of the photoconductor (62),

a second developer station (132) for the application of the colored particles of the second color (B) with a second polarity onto a second surface element of the photoconductor (62),

at least one total exposure unit (136) for the uniform exposure of the photoconductor (62),

and at least one additional developer station (138) for the application of the colored particles of an additional color (R) with the second polarity onto an allocated additional surface element of the photoconductor (62).

9. Electrophotographic printer (10) according to one of the preceding claims, characterized in that in at least one of the print units (60, 212) there are contained:

a charge means (126) arranged near the photoconductor (62),
for the production of an electrical charge of at least one
part of the photoconductor (62),
an exposure means (128) for the one-time exposure according to
an image of the photoconductor per toner image,
a first developer station for the application of the colored
particles of the first color with a selected polarity onto an
allocated first surface element of the photoconductor (62),
at least one total exposure unit (136) for the uniform
exposure of the photoconductor (62),
and at least one additional developer station for the
application of the colored particles of a further color with
the selected polarity onto a further surface element of the
photoconductor (62).

10. Electrophotographic printer (10) according to claim 8 or
9, characterized in that the photoconductor (62) contains an
electrode layer (120) that conducts a predetermined potential
and a photoconductor layer (122) arranged approximately
parallel thereto.

11. Electrophotographic printer (10) according to one of the
preceding claims, characterized in that the colors are
selected by a print control unit (34) from a color palette
with a large number of predetermined colors, whereby a
developer station from one of the print units is allocated to
each individual color of the color palette,
and in that the print control unit (34) activates developer
stations for the application of the selected colors,
and in that at least one additional developer station is in an
idle state during printing, in which no colored particles are
applied by the additional developer station.

12. Electrophotographic printer (10) according to one of the
preceding claims, characterized in that at least one developer

station (130, 132, 138) is placed removably into the print units.

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